Riparian Forest Buffer

Oklahoma Conservation Practice Job Sheet 391 01

Landowner_____

WHAT IS A RIPARIAN FOREST BUFFER?

A riparian forest buffer is an area of trees and/or shrubs located adjacent to streams, lakes, ponds, or wetlands.

PURPOSE

Riparian forest buffers are used to:

- Create shade to lower or maintain water temperatures to improve habitat for aquatic organisms.
- Create or improve riparian habitat and provide a source of detritus and large woody debris.
- Reduce excess amounts of sediment, organic material, nutrients and pesticides in surface runoff and reduce excess nutrients and other chemicals in shallow ground water flow.
- Reduce pesticide drift entering the water body.
- Restore riparian plant communities.
- Increase carbon storage in plant biomass and soils.

HOW IT HELPS THE LAND

Riparian forest buffers of sufficient width intercept sediment, nutrients, pesticides, and other materials in surface runoff and reduce nutrients and other pollutants in shallow subsurface water flow. Woody vegetation in buffers provides food and cover for wildlife, helps lower water temperatures by shading the stream or water body, and slows out-of-bank flood flows. In addition, the vegetation closest to the stream or water body provides litter fall and large wood important to fish and other aquatic organisms as a nutrient source. It also provides structural components to increase channel roughness and habitat complexity. The woody roots increase the resistance of stream banks and shorelines to erosion caused by high water flows or waves. Some tree and shrub species in a riparian forest buffer can be managed for timber, wood fiber, and horticultural products.

WHERE THE PRACTICE APPLIES

Buffers are located along or around permanent or intermittent streams, lakes, ponds, wetlands, or seeps. Many of these areas feature year-round or seasonal moisture, which allows woody species to establish quickly. A new riparian forest buffer can rapidly benefit a variety of settings, such as cropland, rangeland, forest land, and urban areas.

WHERE TO GET HELP

For assistance with designing a riparian forest buffer, contact your local Natural Resources Conservation Service or Conservation District office.

APPLYING THE PRACTICE

Riparian forest buffers are normally established concurrently with other practices as part of a resource management system. For example, adjoining stream banks or shorelines must be stabilized before or in conjunction with the establishment of the buffer (streambank and shoreline protection). To maintain proper functioning of a planting, excessive water flows and erosion must be controlled upslope of the riparian forest buffer (filter strip, diversion, critical area planting, residue management). New plantings must be protected from grazing during establishment (prescribed grazing, use exclusion).

Wildlife

Connecting a riparian forest buffer to existing perennial vegetation, such as woodlots or wooded draws or other woody habitat (windbreak/shelterbelts), benefits all wildlife, including fish and other aquatic organisms. Select tree and shrub species and a planting pattern that benefit the wildlife species of interest and enhances local landscape aesthetics.

OPERATION AND MAINTENANCE

Replace dead and dying woody species in newly established plantings. Trees and shrubs in a riparian forest buffer can eventually become crowded, slowing their growth and the growth, survival, and composition of understory species. As the buffer matures, periodic harvesting of some of the overstory trees and shrubs becomes an important activity for maintaining plant health and buffer function. Some of the older trees that are dead or dying within the buffer area can serve as nesting cavities for terrestrial organisms as well as a source of large wood for aquatic systems.

SPECIFICATIONS

Site-specific requirements are listed on the specifications sheet. Additional provisions are entered on the job sketch sheet.

Riparian Forest Buffer – Job Sheet

Landowner_____ Field number_____

Purpose (check all that apply)	
☐ Create shade to lower or maintain water temperature/improve aquatic habitat	☐ Reduce pesticide drift entering the water body
☐ Provide detritus/large woody debris for aquatic/terrestrial organisms	☐ Restore natural riparian plant communities
☐ Reduce excess sediment, organic material, nutrients, pesticides in surface runoff and excess nutrients/chemicals in shallow groundwater flow	☐ Increase carbon storage in plant biomass and soils

Layout		
Water body/course type and name, other:		
Minimum buffer widths (ft) – specify left and right of stream [facing upstream/downstream (circle appropriate one)] for a two-side buffer; use left only for water bodies, such as lakes and ponds.		
Riparian Forest Buffer Width	Riparian Forest Buffer Length (ft):	Riparian Forest Buffer Acres:
Left: Right:		
Notes:		
Additional location and layout requirements:		

Species/cultivars:	Planting dates:	Plants/acre:	Kind of stock[1]:	Space between rows (ft):	Spacing[2]:
1					
2					
3					
4					
5					
6					
7					
8					
9					

[1]**BA**reroot, **CO**ntainer, **CU**tting, Seed; include size, caliper, height, and age as applicable. [2]Space between plants within each row.

Temporary Storage Instructions

Planting stock that is dormant may be stored temporarily in a cooler or protected area. For stock that is expected to begin growth before planting, dig a V-shaped trench (heeling-in-bed) sufficiently deep and bury seedlings so that all roots are covered by soil. Pack the soil firmly and water thoroughly. Additional requirements:

Site Preparation

Remove debris and control competing vegetation to allow enough spots or sites for planting and planting equipment. Additional requirements:

Planting Methods

For container and bareroot stock, plant stock to a depth even with the root collar in holes deep and wide enough to fully extend the roots. Pack the soil firmly around each plant. Cuttings are inserted in moist soil with at least 2 to 3 buds showing above ground. Additional requirements:

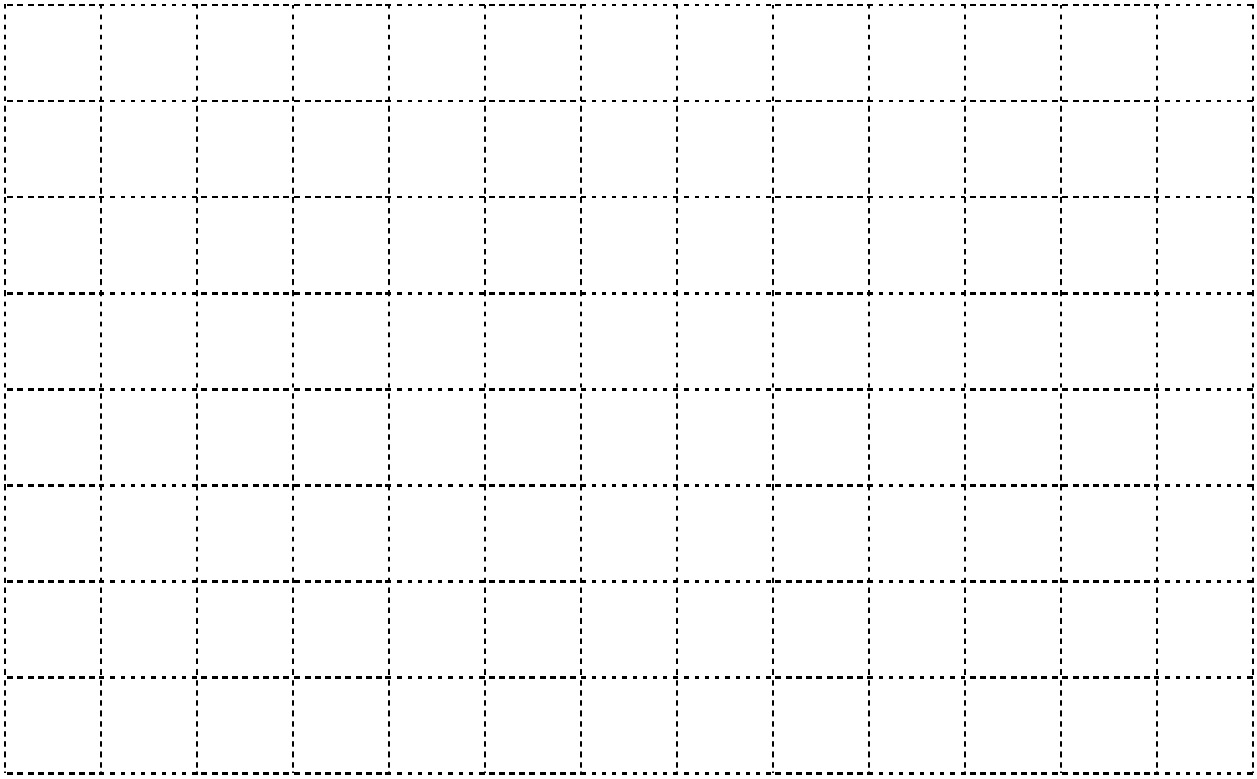
Operation and Maintenance

The buffer must be inspected periodically and protected from damage so proper function is maintained. Replace dead or dying tree/shrub stock and continue control of competing vegetation to allow proper establishment. Periodic harvesting of trees and shrubs in the buffer may be necessary to maintain the health and vigor of mature stands. Keep large dead and dying trees for cavity nesting birds and a source of large wood in aquatic habitats. Additional requirements:

Riparian Forest Buffer – Job Sheet

If needed, an aerial view or a side view of the practice can be shown below. Other relevant information, complementary practices and measures, and additional specifications may be included.

Scale 1"=_____ ft. (NA indicates sketch not to scale: grid size=1/2" by 1/2")



Additional Specifications and Notes: